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Expanding the Scope of Expectations Data Collection: The U.S. and Japanese Stock Markets

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Abstract

A pilot effort was undertaken to experiment with a method of collecting parallel time series data for expectations and popular models and theories of institutional stock market participants in the United States and Japan 1989-91, covering the period before and after the dramatic and sudden halving of Japanese stock prices. Substantial variability within countries through time in the responses and dramatic differences across countries in expectations (even expectations for the same country) were found. There are significant research opportunities in expanded data collection along these lines.

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Expectations data should be collected on a greatly expanded basis: consistent time series data should be collected over long intervals of time and across countries; the kinds of expectations studied should be expanded, to include not only point expectations but also subjective probabilities of events, descriptions of likely scenarios, popular theories, models, and hunches. Data collectors should have routines in place that cause them to initiate new time series when public attention takes a new direction, so that their data collection is done in relevant directions.

Expectations data on the stock market are an important case in point; certainly expectations are of the most critical importance for the behavior of stock prices, but little is known about these expectations. Newspapers print every day discussions of stock market price movements in terms of investor expectations, rumors and hunches, investor moods, technical indicators, investor attention and inattention. These media reporters of financial price movements are very alert to changes in public attention, but they are not systematic in their approach. They do not follow up on the prevalence of thought patterns through time, they do not allow comparisons between groups or across countries.

On a day of a big stock market event, such as a crash, there is usually no news break about the fundamental economic situation that is clearly responsible[1], and when a news break <u>is</u> associated with the stock market event, one may suspect that it is of no more significance than as a

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[1]See Cutler, Poterba and Summers [1989].

reference point that gave a concrete suggestion when market participants should act on other impulses. When economists or analysts are asked by the news media to explain major stock market events when they occur, there is usually an embarrassing lack of content to their remarks.

Time series data, data collected on a consistent basis at regular intervals for an extended period of time, are of fundamental importance to statistical analysis. Any such long systematic time series can be analyzed in connection with all other time series that are available over the same period. Experience with time series data, and a consensus on their meaning, develops gradually as the data series are extended. In contrast, data that are collected only infrequently, or only over short periods of time, are often of relatively little use. The meaning of a datum is often unclear unless it can be compared with data at other points of time, if there is no solid standard for the meaning of levels in such data. For this reason it is difficult for researchers to <u>start</u> collecting a time series, because the payoff to doing so may come only many years later when the series has attained some length.

It is of course also true that collection of data on a consistent basis across countries, regions or other economic divisions is also of great importance, yet even less expectations data are collected on this basis.

In this paper we shall discuss how such expectations data should be collected and report on our own pilot efforts to collect such data from institutional investors in the United States and Japan. Our data cover only institutional investors and we have not tried collecting extensive information about characteristics and trading patterns of respondents. Our data were collected only at relatively long intervals, about twice a year.

On the other hand, we were quite fortunate in that our data covered the period of the biggest and sharpest decline in Japanese stock prices since World War II, and that since this decline that took place not over one day, but over nine months, our frequency of data collection was well suited to understanding this decline. Moreover, our sample is a period when contrasts between U. S. and Japanese expectations were very sharp. There were strong patterns in the data, suggesting great value to expanded data collection along these lines.

I. Difficulties That Have Hampered Expectations Data Collection

There are a couple of important problems that have discouraged consistent programs of expectations data collection. One problem is, perhaps paradoxically, that there are too many such series that might possibly be collected. This a sort of dimensionality problem. Another problem is that data collectors often find that it is difficult to elicit expectations from respondents; people are not ready and willing to provide all these expectations data to surveyors. This is an attention problem: public attention has not been and cannot be focussed on all these dimensions of expectations. We will argue here that both these problems have the same solution: data should be collected in forms on which public attention is already focussed or in a manner that is intended to be revealing about matters already in the public attention. In psychologists terms (Sternberg [1987]), we ultimately need only describe the "prototypes," or "normative

standards of the ideal or typical," that represent common elements in popular thinking.

The dimensionality problem is that the space of expectations is necessarily of higher dimension than the space of economic variables. For each point of time and each economic variable there are expectations of the future path of the variable at all points of time; then there are expectations for the variability of the variable at all points of time and covariability with itself at other points of time, and then there are expectations of the correlation of this variable with each other economic variable at all points of time. Then there are conditional expectations data, what would happen <u>if</u> something else happens, and even data on the popularly held models or theories of the economy: how people think the economy works.[2] Even within each of these categories of expectations data, there are variations on how the data can be collected: how the questions are phrased and in what order they are asked. Lacking any widely disseminated suggestions as to what to collect, and given the costs of collecting data, almost nothing consistent is done over long intervals of time or across geographical regions. The governments of the world, the providers of much of the public goods that expectations data constitute, are not currently under a tradition of data collection that leads them to find any consensus on what expectations data should be collected.

The attention problem is that people really have ready answers only in directions in which their attention is already focussed before the interview

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[2]Collecting such conditional expectations are referred to outside of economics as "interpretive social science" (Rabinow and Sullivan [1979], Berger [1990]). If the theories are not readily expressed by the respondents, then these are what psychologist Sternberg calls "implicit theories."

begins. Katona [1975], based on decades of survey research with the general public in the United States, concluded that most people do not have clearly defined expectations about economic variables, and when prodded to provide them are only coming up with numbers for the surveyor. The surveyors themselves may find themselves becoming discouraged and cynical, that the responses to their questions are just being fabricated to please the surveyor.

Of course, asking people to formulate expectations for some economic variables at specific future dates may well serve to be revealing about their thinking, and may in many cases be the best way to proceed. But one should not suppose that the surveyor is "collecting" expectations data; the surveyor is only putting the respondent through an exercise. One can see that this is the case since when respondents are presented with choices among categories (with, say, a question like: "Do you think that inflation will be a. 3-4%, b. 4-5%, or c. 5-6%?") the choice of categories made by the surveyor heavily affects answers. Many respondents may do little more, when answering such a question, than think "I do not know the answer; I will take the answer with least risk of embarrassing me, the middle answer." Of course the responses to questions asking for numerical expectations data can be changed by the surveyor by changing the wording of the question, but if the same questionnaire is used through time or across regions, the questions do give a sense of the change or difference in expectations.

The more direct approach to dealing with the dimensionality and attention problems is to write questions that are phrased directly in terms that people already speak to each other about; then we do not ask people to invent any more details for their expectations than are already in the

popular culture. This has the advantage of sharply reduced dimensionality and directness. The risk in doing this is that one may not learn exactly what people are thinking; one may only be tabulating the frequency of cliches. That is why it may also be useful to ask more quantitatively defined questions, even ask for respondents' guesses how much some economic data will change. Some judgment by the data collector must be used in deciding how to phrase questions. We believe that the most useful approach will involve asking both kinds of questions, direct questions about what is on investors' minds and indirect or quantitative questions that put them through exercises.

A procedure must be in place to initiate the tabulation of new questions, as public attention takes new directions. This procedure might involve preliminary surveys, with open-ended questions, questions designed to elicit the directions respondents' attention has taken.

A procedure must also be in place to terminate old time series that are no longer under public attention, otherwise the list of time series would tend to grow without bound. While we are inherently interested in time series data collected on a consistent basis over a long period of time, there are limits to how long a time series remains useful. What we advocate here is not the automatic repetition of expectations and interpretations surveys that have already been conducted ago, but merely an effort to follow up on a consistent basis with some rational basis.

II. Existing Time Series Data for the U. S. and Japanese Stock Markets

Few time series data are collected regarding stock market expectations. Governments are the main provider of high-quality time series data on an uninterrupted and intertemporally consistent basis. Yet the U. S. and Japanese governments apparently collect no such series on expectations in the financial markets. In the industry, there are some attempts to collect time series data on stock market expectations, but none of these attempts matches the scope of our pilot studies.

For the United States, there is the very long time series data, extending back to 1952, of Livingston, which is analyzed by DeBondt [1991]. Livingston asked his panel of about 40 economists to forecast the Standard and Poor Index at horizons of seven and thirteen months. From the early 80's and until its bankruptcy, Drexel, Burnham Lambert tabulated the results of a few expectations questions about the stock market under the direction of Richard Hoey. For the past four years, Money Market Services, Inc. of New York has collected one-week and one-month expectations for the Dow Jones Industrial Average and for the Standard and Poor Composite Index. All of these are surveys of experts only, not intended to be surveys of market participants, ask only a few questions about the market, and do not try to devise batteries of questions that get at the reasons for market behavioral patterns. Market Consensus Surveys, Inc., under the direction of William Feltus, collected expectations data of a broad class of market participants in the United States, and proposed to do this on a daily basis by telephone interview, but was unable to make an adequate profit selling the results of these surveys.

In Japan, there appears to be only one published price expectations survey. The Nikkei Financial Daily reports every Saturday the results of a survey of 5 securities companies, 3 banks, 7 institutional investors and 3 foreign companies, in which are given the number of respondents who expect that the markets will be more bullish, more bearish, or neutral compared with the current week. This is their only published expectations question, the number of respondents is quite small, and their time series goes back only to October, 1987.

III. Our Pilot Surveys

We have done such tabulation of responses in both the United States and Japan in a number of surveys in 1989, 1990 and 1991. The U. S. institutional investors were selected at random each time from the section "Investment Managers" from the Money Market Directory of Pension Funds and their Investment Managers, McGraw Hill. In each mailing, 400 questionnaires were sent, yielding responses from about a third. For the Japanese sample, we mailed to almost all of the major Japanese financial institutions, which consist of 165 banks, 46 insurance companies, 114 securities companies, and 45 investment trust companies. No non-financial corporations are included in the sample.

In all but the late 1989 and early 1990 questionnaires, the first portions of the questionnaires, which included the questions reported here, were nearly identical both through time and across the two countries, except, of course, for translation into English or Japanese. The responses

thus enable us to make accurate comparisons across countries and through time. We now have observations both before and after the December 29, 1989 peak of stock prices in Japan. (See Figure 1; U. S. results are not plotted since the U. S. market did not show such dramatic movements over this period.) This peak represents a major turning point in Japanese stock market history; between this peak and the bottom October 1, 1990, nine months later, the Nikkei fell 49.2%.[3]

A. Qualitative and Scenario Questions

Table I. displays questions involving qualitative or scenario statements. After each question are shown the range for that country across our surveys of the proportion choosing a certain answer (or range across surveys of the average answer if the respondent is to fill in a probability), and a χ^2 or an F test of the null hypothesis that the proportion choosing (or the average answer if the question asked for a probability) is constant through time, that is, across our surveys for that country.

At first glance, the questions we asked may seem disappointing, insipid. Is that all, the reader may ask, that these researchers are asking? The very simplicity of these questions, however, is dictated by the

[3]The plot shows end-of-week data; the total drop shown is less than 49.2% because the peak and trough did not occur at the end of the week.

principle that questions must be worded in such a way that everyone should understand them readily. The real issue for us is whether the comparisons of these answers through time or across countries might be interesting or useful for research on the causes of stock market movements. Our tabulating time series on answers to such questions might be regarded as a first step in a more deep, and judgmental, study of respondents' cognitions.[4]

Questions I-1 and I-2 in Table I about whether the market is overpriced, that is high relative to fundamental value, were included because we learned that the concept of an overpriced market was very much on people's minds at the time of the stock market crash of October 1987. At the time of this crash, when institutional and individual investors were asked in a questionnaire survey to explain the cause of the crash in their own words, and the responses coded, the most important theme in their answers was that the market was overpriced (Shiller, [1989], Shiller et al. [1991]).

We find in the results reported here that the U. S. investors were consistently more likely to think that the market prices are too high, and are dramatically more likely to think this about the Japanese market. In mid 1989, 73.5% of U. S. respondents thought the Japanese market was overpriced, while only 26.6% of the Japanese did. Most Japanese became temporarily of the opinion that their market was too high right after the Japanese market had its spectacular 4.5% drop on February 26, 1990: the

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[4]This is the first step that Sternberg [1987], in his proposed methodology for implicit theories research, called "behavioral listings." He, of course, expects his method to be applied to subjects in a psychology laboratory, not to the world financial markets; it is easier for psychologists to obtain large enough quantities of data to make a rapid transition to his second step of "prototypical analysis," where the popular theories and models are fleshed out.

early 1990 survey of Japanese investors (before most of the dramatic downturn in the Nikkei had occurred) shows that 61.1% of them felt that the Japanese market was overpriced. But in mid 1990, a comparison of the U. S. and Japanese responses after most of the enormous decline in the Tokyo stock market and after the Iraqi oil crisis shows a return to nearly the same pattern as in mid 1989, with Americans strongly tending to think that the Japanese market is overpriced and the Japanese respondents again dramatically less likely to think so.

A common element in the popular notion of a speculative bubble is that during the expansion phase, or bull market, increasing numbers of investors are buying stocks because they think that prices will go up for a while longer, and hope to exit before the bubble bursts. Conversely, a bear market may be caused by increasing numbers of investors who think that the market will continue to go down for a while, and who are waiting for the recovery to enter the market. It is not obvious how to elicit from our respondents whether they are thinking this way. We could ask for their expectations at various horizons in the future, and see how many put down an expectation of rise, then fall in prices; we asked such questions, as will be discussed below. But it is possible that a question asking for numerical values for their expectations tends to be answered in a mechanical way that obscures their hunches as to the precise turning point dates of the market.

A more simple and direct approach to deriving evidence on this speculative behavior can be had by asking whether respondents would advise staying in the market for the time being, even though they expect the market to drop, and conversely. Without specifying the horizon of the associated

forecasts, we allow the respondent to reveal directly whether he or she is thinking in terms of a reversal. This was done in both countries (questions I-3 and I-4). These questions are imprecise in that they do not specify when the respondent would want to exit or enter the market. But, with identical questionnaires through time and across countries, our results should reveal some changes in thinking.

It is striking that generally most of both the U. S. and Japanese respondents answered "true" to one of questions I-3 or I-4. Thus, in a sense, most of our investors appear to be either relatively in the market hoping to get out before it drops or relatively out of the market hoping to get in before it rises.

The dates that U. S. respondents wrote in as their best guesses for the peak (bottom) show a strong tendency to be within six months, or no more than a year, from the current date. The question did not suggest what the relevant time horizon was, and so this relatively short-term horizon appears to be an element of investor thinking at the time.

In the answers to these questions, we do see a change in the behavior of Japanese investors before and after the debacle in Japanese stock prices. In mid 1989, before the December 1989 peak in Japanese stock prices, a substantial fraction of Japanese investors (39.1%) answered "true" to question I-3, indicating that they were planning to get out of the market later, whereas in mid 1990, when the Japanese market was near its bottom value, the fraction who answered "true" became very small (7.3%). Between these two dates the fraction of Japanese investors who answered "true" to question I-4, indicating that they were planning to wait before getting into the market, rose from 23.7% to 55.3%. This evidence is consistent with the

notion that the Japanese stock market debacle might have been caused by changed short-run expectations for prices.

Question I-5 was directed at learning directly about a concomitant of the kinds of speculative booms that were widely reported about the booms preceding the 1929 crash and other booms: just that people seemed to be very excited about stock market investing. That people were getting excited about investing is so much a part of the story people tell of these booms; if people are getting excited, they must know it and can report it to us. Time variation is statistically significant, though not highly.

There is much higher statistical significance to the time-variation in answers to an analogous question, Question I-6, asking respondents whether the trend in stock prices over the past six months was due to fundamentals or to investor psychology. In Japan, opinions that they reflect fundamentals dominated at all times except for mid-1990. Americans attached more importance to the psychological element than the Japanese, although the difference is not large. We should note that, based on our experience, investors seem to put much more importance on psychology when asked to explain big moves in short periods of time. Just after the biggest one-day stock market crash in history, October 19, 1987, 64% of U. S. institutional investors (and 68% of U. S. individual investors) [Shiller 1989] and 73% of Japanese institutional investors [Shiller et al. 1991] thought that the crash was due to investor psychology. Just after the 6.9% one-day drop in the Dow Jones Industrial Average on October 13, 1989, 77% of U. S.

investment professionals[5] and 83% of Japanese institutional investors chose psychology as an explanation for the drop.

Question I-7 was phrased to get at a possibly time-varying parameter in a feedback mechanism that feeds past price movements into current changes in demand and hence into price movements, by asking how a past price change affects people's expectations for the future. Stock market crashes are often thought to be caused by such a feedback, as initial price decreases engender pessimistic expectations and hence more price decreases, but if we hold such a theory we must explain why the feedback is not causing crashes every day. We would have an explanation if we understood how response patterns change through time. Our statistics show less significance in this sample than was the case with the other questions, but time variation in the proportion expecting to increase further after an initial increase was significant at conventional levels; this suggests that it may be useful to continue collecting such data. Of course, much more research is needed to know how to interpret such feedback mechanisms. Further survey work should inquire about other technical theories and trading rules (such as those concerning resistance levels, moving averages, etc.) to see how feedback might change through time.

Question I-8 asks respondents for their subjective probability of a stock market crash. Such subjective probabilities have obvious relevance to any theories that stock market crashes are caused by fears of crashes; more on this question below. Time variation in the answers to this question are

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[5]See Robert Shiller and William Feltus, "Fear of a Crash Caused the Crash, New York Times, October 29, 1989.

highly significant, even in this sample period when there was no one-day stock market crash.

B. Expectations of Future Price Increases

As discussed above, there may be resistance from respondents when they are asked to give point expectations at various horizons, and they may even be unable to produce such expectations. Still, we tried asking directly for expectations for various investor horizons; in addition we asked investors in one country to forecast the stock market in the other country. We asked respondents to give forecasted changes in the Dow Jones Industrial Average and the Nikkei Dow for horizons of three months, six months, 12 months, and ten years, Table II. As with Table I., we present after each question F statistics for the null hypothesis that the expectation was constant through time for that country.

The results confirm that the expectations do change through time both for the United States and Japan, and that the pattern across forecasting horizons is a complicated one, not simply monotonic. Consider, for example, the expectations of U. S. investors for the Dow Jones Industrial Average. The short run expectations, for changes over the next three or six months, were significantly more optimistic in mid 1989 and early 1991 than they were in the other two periods, early and mid 1990. In these data, short-run expectations might be considered to be extrapolative, in that the optimistic short-run expectations came after market increases and pessimistic after

market decreases, but clearly more data are needed to confirm such a pattern. At the same time, the longer run expectations do not match up well with the shorter-run expectations. For example, a reversal is expected on average in early 1990: a 5.46% decline in six months and this is to be almost eliminated by twelve months.

We also see in the answers to the Table II questions confirmation that there are striking differences between U. S. and Japanese expectations, even for the same markets. The Japanese were uniformly more optimistic in their short-run expectations than the Americans, both for the U. S. market and for the Japanese market, but particularly so for the Japanese market. At a horizon of one year, there was always a spread on the order of 20 percentage points between the Japanese and U. S. forecasts for the Japanese market. The differences between U. S. and Japanese expectations at the long-run horizon of 10 years are not so striking as the differences at the one-year horizon, and the Japanese were actually less optimistic about the U. S. market at the 10-year horizon. Thus, the Japanese are consistently described as short-run optimists only.

The drop in the Japanese market after the end of December 1989 had surprisingly little consistent impact on one-year-ahead forecasts for the Japanese market either in Japan or in the United States. The post-decline responses show rather more the appearance of some short-run pessimism; the U. S. and to some extent the Japanese respondents became less sanguine about the three- and six-month outlook than they were in mid 1989.

These remarkable differences in expectations between U. S. and Japanese respondents have some potential use for researchers. Consider, for example, the puzzle posed by French and Poterba [1990], that there is very little

cross-border stocks investment between the U. S. and Japan. Our results suggest a possibly simple explanation: investors in each country are optimistic about the stock market in their own country. For another example, consider the Feldstein-Horioka [1980] puzzle that aggregate investment in each country tends to be highly correlated with aggregate savings in that country; that people may be optimistic about their own country certainly seems potentially relevant to understanding that puzzle. More research could be done to establish the potential validity of such notions, if longer time series become available.

IV. Evaluation of Results and the Promise of Such Methods

Will researchers find use for long time series data like that presented here, broken down by countries or other divisions?

Many researchers no doubt have a reaction that these data look disreputable: so many unfounded and insubstantial claims have been made regarding market psychology, that these data suffer by association. However, once substantial time variation in these data is found and found to be correlated with economic phenomena, the potential importance of such data may become so palpable as to force scholarly attention.

Many researchers seem to react that the qualitative or scenario questions whose answers are tabulated in Table I do not look precise enough, that they are too loosely worded to allow accurate interpretation, that they may look like cliche's or casual statements seen in the media. But this reaction often stems from a faulty appreciation of the purpose of such

questions: to learn about changing public thinking patterns in the terms of the cognition associated with these patterns themselves.

Some researchers seem to react against the very fact that questions themselves are not stable through time, that while there is an effort to collect long time series on stable questions, these questions will be eventually changed, and for no solid, objective reason, seemingly at the whim of the researcher. But, if surveys are conducted right, the questions are changed only in response to changing attention of the public, that it is the public attention that is capricious and not (one would hope) the attention of the researcher.

Many researchers have doubts that the results of such surveys can ever be incorporated into any rigorous analysis. These results, they believe, are curiosities, throwaways, not worthy of methodical scholars. Indeed, the research direction we advocate here runs contrary to a major research effort, conducted by mathematical economists, to respond to anomalous evidence against the conventional models of rational optimizing behavior by trying to replace these models by alternative systematic, simple and elegant models. Their work rarely confronts the sociological basis of human behavior, and does not model the complexity of behavioral patterns that can arise when people learn theories about the economy and of enlightened behavior from each other. In any event, for truly methodical scholars of all persuasions, curious facts, facts that do not quite fit in with preconceptions, should never be overlooked; they can have major impact on their work, even if their methods do not specify how to handle such data formally.

Many researchers feel that the expectations data collected by surveys are by necessity inferior to expectations inferred or derived from market prices. Consider, for example, the expectations for a stock market crash that can be inferred from implied volatilities in the stock index options markets. It is possible to infer from options prices not only implied variances of price changes but also implied skewness of subjective distributions of price changes. There are thus, in market prices, implicit probabilities of a crash within various future dates. Thus, for example, Bates [1991] was able to analyze whether the stock market crash of 1987 was expected. Aren't these probabilities inherently better than probabilities that people write down on survey forms? People who will go so far as to take a position in an options market are likely to think more carefully about the probability of a crash; their judgment is considered rather than hasty. Moreover, the sample size, the number of people whose expectations have an impact on the implied volatility, is enormously greater with the implied volatilities than with the survey data. When dealing with an entire options market, then the results may in fact be considered not a sample at all, but the universe for that market. In fact, however, these presumed arguments that the implied volatilities or other market-derived expectations data are the final word on this matter, are largely invalid. The arguments disregard the fundamental sociological fact that the expectations that are relevant for market behavior diffuse across different subpopulations of the investing public at different rates, and that attention of certain subpopulations shifts from one market to others. Surely, the prices in the options markets reflect the considered opinions of all people who are currently trading in these markets, but these people are hardly, by any

stretch of the imagination, a random sample of all people who might sell stocks at the time of crash. Suppose we are interested in a theory of a crash wherein a small price drop acts as a trigger for a stock market crash, so that people, fearing a crash, thereby produce the very crash they feared. With such a theory, we would generally expect that most of these people may never have given careful consideration to the probability of a crash, are not closely involved with options markets and many may even have inconsistent or wrong theories of these markets. We won't know what they are thinking unless we ask, and the opportunity is lost forever if we wait beyond the length of people's short-term memories, or until after a major event that changes their patterns of thinking.

As regards the probabilities of a crash inferred by Bates from options price data, we may note that the probabilities behaved in strange ways. Fears of a crash were strong, he reports, in October 1986 through February 1987 and again from June through August 1987, but had mostly abated by the days right before the crash. To him this is a puzzle; nothing more can be done from existing data to gauge public opinion then. There is on the other hand casual evidence that expectations of a crash were quite strong just before the crash: the Wall Street Journal on the morning of the crash published a chart of recent stock prices with stock prices in 1929, inviting the reader to suppose that the scenario might repeat; the cover of Atlantic on newsstands the day of the crash had ominous words suggesting a crash; a book by Ravi Batra predicting a crash in 1990 had been on the New York Times bestseller list for 14 weeks as of the day of the crash. Surely people were reading these, but we just do not know what sense they made of them; prices

in the options market can hardly be considered the ultimate measure of their thoughts.

If expectations data are collected directly from people, rather than inferred by market prices, then we can learn how various populations in the investing public are thinking. And if investigators save raw data from survey results, researchers will want to analyze it in their own ways.

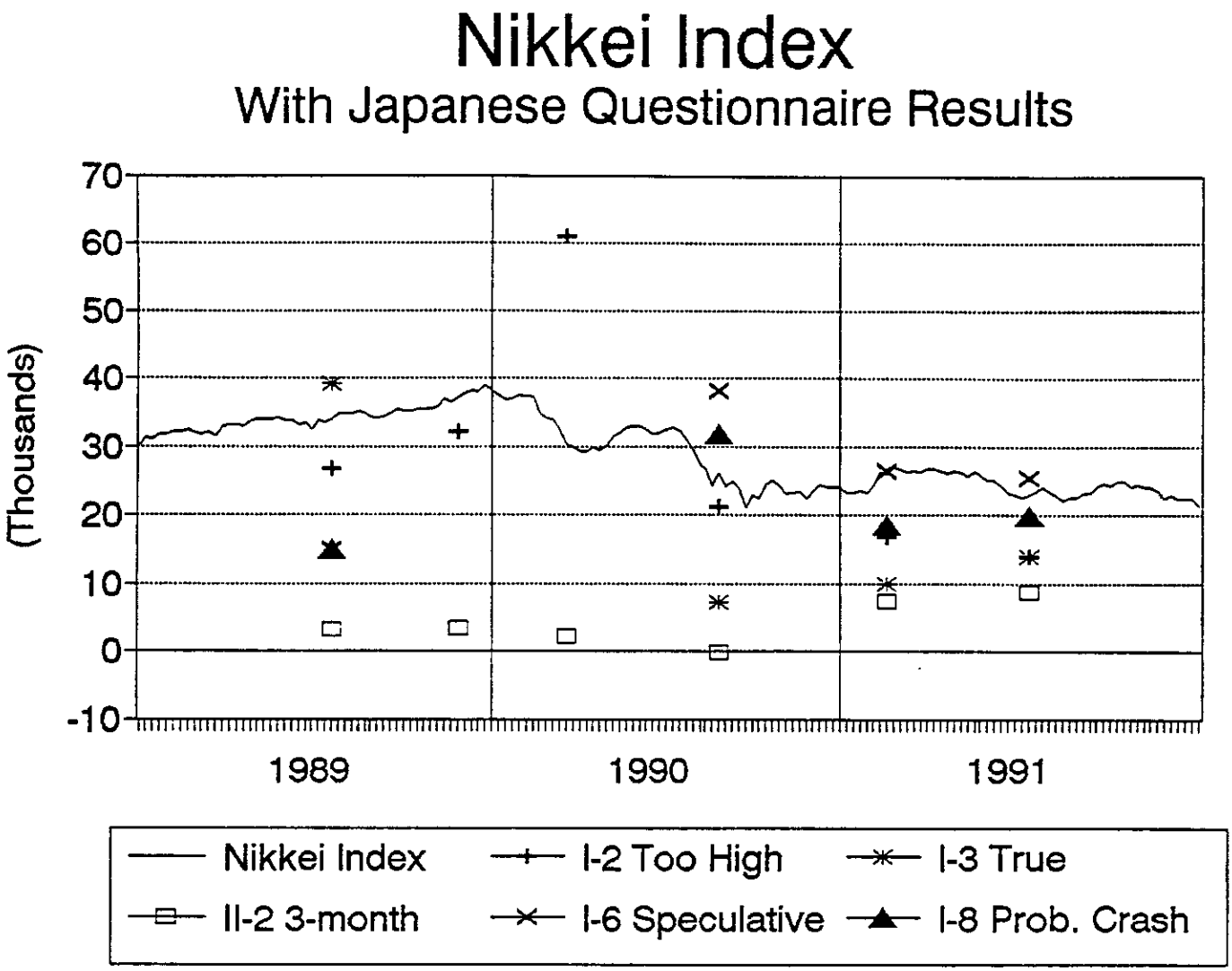
Investigators are of course already mining existing data to try to learn how certain subgroups trade differently. Consider for example the studies of the U. S. stock market crash of October 1987. The major studies (Presidential Task Force on Market Mechanisms (Brady Commission) [1988], the Securities and Exchange Commission report [1988], the New York Stock Exchange report of Katzenbach [1987], the CME report of Miller, Hawke, Malkiel and Scholes [1987], and the CFTC Interim Report [1987]) all placed great stress on the spread between the S&P Index and the S&P Futures Price, and thus on the relative behavior of people who habitually trade on one or the other markets. These reports also paid attention to the relative behavior of large traders, and of traders of various institutional categories. There have also been studies revealing that insiders traded strikingly differently from the overall population at the time of the stock market crash of 1987 (Netter and Mitchell [1989], Seyhun [1990]). While these studies made perhaps the best use possible of available data, they suffered from the problem that these categories of economic agents are really not very meaningful in terms of the causes of the stock market crash; despite their different institutional affiliations and circumstances, all these people had to confront very similar problems of deciding what to do in a time of a national market crisis. We are not told what these different

categories of investors were actually thinking. There was in some of these studies a notion that certain investing fads (notably portfolio insurance strategies) had diffused through these different investing populations at different rates, but information on these patterns of strategy was very sparse. Since portfolio insurance was a very well-defined strategy, researchers were able to get some indication of its importance, but were totally blind to the less publicly defined strategies and expectations of the great multitude of investors.

There are many other ways to group investors than just as traders in New York or Chicago, or as insiders or outsiders; in fact more revealing breakdowns would be according to their opinions, expectations, or theories. Extensive survey data about expectations as well as actual trading behavior would enable us to break down investors' trading behavior into many more categories than those possible today, telling a much more revealing picture about what goes on during market events.

As the time series evidence becomes tied in by scholarly research to more and more economic phenomena - and one would hope to more expectations data collected for nonfinancial markets as well - a surer knowledge and sense of reality of the underlying sociological structure of these markets should emerge. And of course, research methods can and will adapt to reality, in ways that cannot be fully foreseen.

Figure 1



Notes to Figure 1: Nikkei index is measured in thousands, other variables are measured in percent. End of week data are shown for the Nikkei, for all weeks in 1989, 1990, and 1991. Plus denotes percent of Japanese respondents answering that prices are "too high" in answer to question I-2 about the Japanese market. Asterisk denotes percent answering "true" to question I-3, indicating an intent to stay in market for the time being only. Box denotes expected percentage change, in answer to question II-2, in the Nikkei over succeeding three months. X denotes percent of respondents choosing answer 2 to question I-6, "speculative thinking" as their interpretation of the trend in Japanese stock prices over the past 6 months. Triangle denotes the probability of a crash in the next 6 months, in answer to question I-8.

Table I

Qualitative or Scenario Expectations

I-1. "Stock prices in the United States, when compared with measures of true fundamental value or sensible investment value, are:"

	"1. Too low.	2. Too high.	3. About right.	4. Do not know."
US. Range:	4.9%-16.0%	9.4%-47.1%	45.9%-62.7%	0.7%-3.9%
$\chi^2(4)$	15.25**	27.34***	9.95*	4.63
Japan Range:	0.8%-18.0%	0.0%-19.2%	55.3%-65.0%	15.0%-30.7%
$\chi^2(5)$	32.88***	42.98***	3.91	10.73

I-2. "Stock prices in Japan, when compared with measures of true fundamental value or sensible investment value are:"

	"1. Too low.	2. Too high.	3. About right.	4. Do not know."
US. Range:	0.0%-1.3%	67.2%-82.6%	5.8%-10.4%	10.1%-18.7%
$\chi^2(4)$	4.94	12.72*	2.60	9.55*
Japan Range:	0.8%-46.7%	13.9%-61.1%	24.4%-62.6%	2.5%-14.2%
$\chi^2(5)$	177.73***	90.71***	64.74***	14.32*

I-3. "Although I expect a substantial drop in stock prices in [the US, Japan] ultimately, I advise being relatively heavily invested in stocks for the time being because I think that prices are likely to rise for a while."

	"1. True	2. False	3. No opinion"
US. Range:	11.1%-34.4%	60.5%-88.8%	12.6%-22.9%
$\chi^2(4)$	29.36***	44.47***	19.41***
Japan Range:	7.3%-39.1%	26.8%-70.7%	22.0%-34.1%
$\chi^2(5)$	57.47***	66.12***	31.85***

I-4. "Although I expect a substantial rise in stock prices in [the US, Japan] ultimately, I advise being less invested in stocks for the time being because I think that prices are likely to drop for a while."

US. Range:	24.6%-86.3%	20.7%-62.3%	8.9%-18.9%
$\chi^2(4)$	75.31***	62.41***	7.18
Japan Range:	23.1%-55.3%	17.1%-45.3%	27.6%-36.7%
$\chi^2(5)$	40.27***	30.66***	2.92

I-5. "Many people are showing a great deal of excitement and optimism about the prospects for the stock market in [US, Japan], and I must be careful not to be influenced by them.

	True	False	No Opinion
US. Range:	41.1%-55.5%	21.9%-33.8%	20.0%-29.7%
$\chi^2(4)$	10.44*	5.75	3.52
Japan Range:	23.7%-41.3%	16.9%-39.8%	36.4%-43.1%
$\chi^2(3)$	14.26**	19.34***	1.88

I-6. What do you think is the cause of the trend of stock prices in [the United States, Japan] in the past six months? 1. It properly reflects the fundamentals of the [U. S., Japanese] economy and firms. 2. It is based on speculative thinking among investors or overreaction to current news. 3. Other. 4. No opinion

US. Range:	22.0%-56.6%	19.1%-41.2%	23.5%-42.2%	0.7%-6.4%
$\chi^2(4)$	39.59***	28.81***	20.92***	12.17*
Japan Range:	31.6%-72.4%	14.9%-38.2%	11.9%-28.7%	0.0%-1.5%
$\chi^2(3)$	46.13***	18.98***	13.54**	1.94

I-7. If the [Dow, Nikkei] dropped 3% tomorrow, I would guess that the day after tomorrow the [Dow, Nikkei] would:

	1. Increase	2. Decrease	3. Stay the Same	4. No Opinion
US. Range:	18.6%-36.2%	16.4%-29.8%	7.3%-13.3%	27.3%-41.4%
$\chi^2(4)$	16.96**	8.57	4.78	7.87
Japan Range:	28.1%-42.8%	10.7%-21.6%	3.7%-12.4%	29.7%-45.5%
$\chi^2(3)$	9.44*	5.96	6.77	8.19*

I-8. What do you think is the probability of a stock market crash, like that of October 29, 1929 or October 19, 1987, in the next six months? (An answer of 0% means that it cannot happen, an answer of 100% means that it is sure to happen.)

US. Range:	14.37%-23.67%
F(4,714)	7.10***
Japan Range:	14.61%-31.71%
F(3,508)	12.51***

Notes: The hyphenated pair of statistics shown after each answer is the range across our surveys of the proportion (among respondents in the country indicated at left) choosing that answer, or range across surveys of the average answer if the respondent is to fill in a quantity. Statistics reported under the range are chi-squared (or f statistics) of the null hypothesis that the proportion (or value if f statistic) is unchanging through time (that is, across our surveys for that country). * Significant at 5% level. ** Significant at 1% level. *** Significant at 0.1% level. Own country was used for bracketed words.

Table II.

Quantitative Expectations

II. "How much of a change in percentage terms do you expect in the following (use + before your number to indicate an expected increase, a - to indicate an expected decrease, leave blanks where you do not know):"

"[FILL IN ONE NUMBER FOR EACH]"

II-1. "Dow Jones Industrial Average "

	"In 3 months	In 6 months	In 1 year	In 10 years"
US:	-4.40% to 1.24%***	-5.40% to 1.93%	-0.26% to 7.82%	95.85% to 129.02%
	f(4,560)=6.95***	f(4,535)=10.78***	f(4,574)=7.28***	f(3,421)=1.23
Japan:	-2.12% to 4.58%***	0.60% to 7.49%***	4.28% to 12.56%**	83.57% to 141.91%
	f(5,543)=6.99***	f(5,531)=4.96***	f(5,525)=3.94**	f(5,455)=2.18

II-2. "Nikkei Dow (Japan)"

	"In 3 months	In 6 months	In 1 year	In 10 years"
US:	-6.34% to 1.50%***	-8.76% to 0.91%***	-9.14% to 0.94%**	67.08% to 110.21%
	f(4,285)=8.37***	f(4,286)=6.61***	f(4,317)=4.51**	f(3,235)=2.09
Japan:	-0.18% to 8.64%***	1.95% to 11.91%***	8.22% to 19.33%***	129.06% to 187.70
	f(5,260)=15.18***	f(5,610)=15.51***	f(5,611)=7.28***	f(5,508)=2.20

The pair of percentages shown after each answer is the range across our surveys (through time) of the average percentage change expected by respondents in the country indicated at left. Statistics reported under the range are f statistics of the null hypothesis that the expected change is unchanging through time. * Significant at 5% level. ** Significant at 1% level. *** Significant at 0.1% level.

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Appendix

[Not for publication]

Appendix

Data Sources and Mailing Dates

The U. S. institutional investors were selected at random from the section "Investment Managers" from the Money Market Directory of Pension Funds and their Investment Managers, McGraw Hill. In successive surveys, a new random sample was taken each time, so that respondents were not surveyed twice.

For the Japanese sample, we mailed to almost all of the major Japanese financial institutions, which consist of 165 banks, 46 insurance companies, 114 securities companies, and 45 investment trust companies. No non-financial corporations are included in the sample.

Mailing Dates:

United States:

Mid 1989: On July 5, 1989, 400 questionnaires with letters were mailed; a reminder postcard was mailed July 14 and a second (replacement) questionnaire and letter was mailed to those who did not respond on July 28, 1989.

Early 1990: On January 17, 1990, 400 questionnaires with letters were mailed; a reminder postcard was mailed a week later and two weeks later a second (replacement) questionnaire and letter was mailed to those who did not respond.

Mid 1990: On July 27, 1990, 400 questionnaires with letters were mailed; a reminder postcard was mailed a week later and a second (replacement) questionnaire and letter was mailed to those who did not respond, on August 20, 1990.

Early 1991 On January 31, 1991, 400 questionnaires with letters were mailed; a reminder postcard was mailed a week later and a second (replacement) questionnaire and letter was mailed to those who did not respond, on February 20, 1990.

Mid 1991: On August 20, 1991, 400 questionnaires were mailed; a reminder postcard was mailed a week later and a second (replacement) questionnaire and letter was mailed to those who did not respond, on September 6, 1991.

Japan:

Mid 1989: On July 3, 1989, 384 questionnaires were mailed. There were 139 responses, 19 returned without answer, including 7

government financial institutions who are not allowed to have stocks.

Late 1989: On November 9, 1989, 370 questionnaires were mailed. There were 162 responses by December 11; 4 were returned unanswered.

Early 1990: On March 6, 1990 369 questionnaires were mailed, there were 127 responses by April 15, 7 were returned unanswered.

Mid 1990: 369 Questionnaires were mailed on August 10, 1990; there were 136 responses by September 11, 9 were returned unanswered.

Early 1991: 369 questionnaires were mailed on February 2, 1991; there were 125 replies by March 4, 6 were returned unanswered.

Mid 1991: 368 questionnaires were mailed September 9; there were 122 replies, 1 was returned unanswered.

Question I-1

"Overpricing" of Market

"Stock prices in the United States, when compared with measures of true fundamental value or sensible investment value, are:"

	"1. Too low.	2. Too high.	3. About right.	4. Do not know."
U. S. mid 89	16.0% (3.0%) n=150	18.7% (3.2%)	62.7% (3.9%)	2.7% (1.3%)
Japan mid 89	18.0% (3.3%) n=139	0.0%	63.3% (4.1%)	18.7% (3.3%)
Japan late 89	11.3% (2.5%) n=159	9.4% (2.3%)	55.3% (3.9%)	23.9% (3.4%)
U. S. early 90	10.0% (2.5%) n=140	37.9% (4.1%)	51.4% (4.2%)	0.7% (0.7%)
Japan early 90	5.5% (2.0%) n=127	0.8% (0.8%)	63.0% (4.3%)	30.7% (4.1%)
U. S. mid 90	4.9% (1.8%) n=143	39.2% (4.1%)	52.4% (4.2%)	3.5% (1.5%)
Japan mid 90 B	5.2% (1.9%) n=135	11.1% (2.7%)	63.0% (4.2%)	20.7% (3.5%)
U. S. early 91	13.9% (3.0%) n=132	35.4% (4.2%)	47.2% (4.3%)	3.9% (1.7%)
Japan early 91	5.6% (2.1%) n=125	10.4% (2.8%)	64.0% (4.3%)	20.0% (3.6%)

U. S.	mid 91	5.7% (1.9%) n=157	47.1% (4.0%)	45.9% (4.0%)	1.3% (0.9%)
Japan	mid 91	0.8% (0.8%) n=120	19.2% (3.6%)	65.0% (4.4%)	15.0% (3.3%)

Question I-2

"Stock prices in Japan, when compared with measures of true fundamental value or sensible investment value are:"

		"1. Too low.	2. Too high.	3. About right.	4. Do not know."
U. S. mid 89		0.0%	73.5% (3.6%)	7.9% (2.2%)	18.5% (3.2%)
		n=151			
Japan mid 89		1.4% (1.0%)	26.6% (3.7%)	62.6% (4.1%)	9.4% (2.5%)
		n=139			
Japan late 89		6.4% (2.0%)	32.1% (3.7%)	52.6% (4.0%)	9.0% (2.3%)
		n=156			
U. S. early 90		0.0%	81.0% (3.4%)	5.8% (2.0%)	13.1% (2.9%)
		n=137			
Japan early 90		0.8% (0.8%)	61.1% (4.3%)	24.6% (3.8%)	13.5% (3.0%)
		n=126			
U. S. mid 90		0.7% (0.7%)	82.6% (3.2%)	6.5% (2.1%)	10.1% (2.6%)
		n=138			
Japan mid 90	B	11.1% (2.7%)	44.4% (4.3%)	37.0% (4.2%)	7.4% (2.3%)
		n=135			
	A	40.2% (4.4%)	21.3% (3.6%)	24.4% (3.8%)	14.2% (3.1%)
		n=127			
U. S. early 91		0.0%	67.2% (4.1%)	10.4% (2.6%)	22.4% (3.6%)
		n=134			

Japan	early 91	36.0% (4.3%) n=125	16.8% (3.3%)	40.8% (4.4%)	6.4% (2.2%)
U. S.	mid 91	1.3% (0.9%) n=155	71.0% (3.6%)	9.0% (2.3%)	18.7% (3/1%)
Japan	mid 91	46.7% (4.5%) n=122	13.9% (3/1%)	36.9% (4/4%)	2.5% (1.4%)

Numbers in parentheses are standard errors. See also Notes to Tables below.

Question I-3

Short-Run Speculative Behavior

"Although I expect a substantial drop in stock prices in [the US, Japan] ultimately, I advise being relatively heavily invested in stocks for the time being because I think that prices are likely to rise for a while."

			"1. True"	2. False	3. No opinion"	"Expected peak:" <6 months	<12 months
U. S.	mid 89		34.4% (3.9%) n=151	53.0% (4.1%)	12.6% (2.7%)	57.4% (7.2%) n=47	87.2% (4.9%)
Japan	mid 89		39.1% (4.2%) n=138	26.8% (3.8%)	34.1% (4.0%)		
U. S.	early 90		16.0% (3.2%) n=134	88.8% (2.7%)	5.2% (1.9%)	44.4% (16.6%) n=9	77.7% (10.5%)
U. S.	mid 90		11.1% (2.7%) n=135	65.9% (4.1%)	22.9% (3.6%)	40.0% (15.5%) n=10	50.0% (15.8%)
Japan	mid 90	B	6.8% (2.2%) n=132	67.4% (4.1%)	25.8% (3.8%)		
		A	7.3% (2.3%) n=123	70.7% (4.1%)	22.0% (3.7%)		
U. S.	Early 91		26.4% (3.9%) n=129	60.5% (4.3%)	13.2% (3.0%)	64.9% (7.8%) n=37	75.7% (7.1%)
Japan	Early 91		9.8 (2.7%) n=122	59.0 (4.5%)	31.1 (2.1%)	41.7% (14.2%) n=12	91.7% (8.0%)

U. S.	mid 91	17.6% (3.1%) n=153	64.1% (3.9%)	18.3% (3.1%)	60.0% (8.9%) n=30	70.0% (8.4%)
Japan	mid 91	14.0% (3.1%) n=121	55.4% (4.5%)	30.6% (4.2%)		

Question I-4

5. "Although I expect a substantial rise in stock prices in [the US, Japan] ultimately, I advise being less invested in stocks for the time being because I think that prices are likely to drop for a while."

			"1. True	2. False	3. No opinion"	"Expected bottom:" <6 months	<12 months
U. S.	mid 89		24.6% (3.6%) n=146	62.3% (4.0%)	13.0% (2.8%)	58.8%% (8.4%) n=34	85.3% (6.1%)
Japan	mid 89		23.7% (3.7%) n=135	41.5% (4.2%)	34.8% (4.1%)		
U. S.	early 90		86.3% (3.0%) n=135	20.7% (2.5%)	8.9% (2.5%)	60.0% (5.5%) n=80	92.5% (2.9%)
U. S.	mid 90		53.7% (4.3%) n=136	28.7% (3.9%)	17.6% (3.3%)	63.6% (5.9%) n=66	80.3% (4.9%)
Japan	mid 90	B	65.6% (4.2%) n=131	13.7% (3.0%)	20.6% (3.5%)		
		A	55.3% (4.5%) n=123	17.1% (3.4%)	27.6% (4.0%)		
U. S.	Early 91		34.7% (4.3%) n=121	48.8% (4.5%)	16.5% (2.1%)	54.1% (8.2%) n=37	91.9% (4.5%)
Japan	Early 91		35.8% (4.3%) n=122	27.5% (4.1%)	36.7% (4.4%)	77.8% (6.2%) n=45	100.0%

U. S.	mid 91	38.4% (4.0%) n=151	44.4% (4.0%)	17.2% (3.1%)	75.5% (5.9%) n=53	88.7% (4.3%)
Japan	mid 91	23.1% (4.6%) n=117	45.3% (4.3%)	31.6% (4.1%)		

Numbers in parentheses are standard errors. In the questions in this table, U. S. respondents were asked about the U. S. market, Japanese respondents about the Japanese market. See also Notes to Tables below.

Question I-5

"Many people are showing a great deal of excitement and optimism about the prospects for the stock market in [US, Japan], and I must be careful not to be influenced by them.

	"1. True	2. False	3. No opinion"
U. S. mid 89	55.5% (4.1%) n=146	21.9% (3.4%)	26.0% (3.6%)
Japan mid 89	37.2% (4.1%) n=137	19.7% (3.4%)	43.1% (4.2%)
U. S. early 90	41.1% (4.2%) n=136	33.8% (4.1%)	25.0% (3.7%)
U. S. mid 90	43.5% (4.2%) n=138	26.8% (3.8%)	29.7% (3.9%)
Japan mid 90	41.3% (4.3%) n=160	16.9% (3.3%)	41.9% (4.1%)
U. S. Early 91	54.8% (4.3%) n=135	25.2% (3.7%)	20.0% (3.4%)
Japan Early 91	34.4% (4.2%) n=125	26.4% (3.9%)	39.2% (4.4%)

U. S.	mid 91	44.1% (4.0%) n=155	29.6% (3.7%)	26.3% (3.5%)
Japan	mid 91	23.7% (3.9%) n=118	39.8% (4.5%)	36.4% (4.4%)

Question I-6

"What do you think is the cause of the trend of stock prices in [the United States, Japan] in the past six months? 1. It properly reflects the fundamentals of the [U. S., Japanese] economy and firms. 2. It is based on speculative thinking among investors or overreaction to current news. 3. Other. 4. No opinion."

	1.	2.	3.	4.
U. S. mid 89	56.6% (4.0%) n=152	19.1% (3.2%)	23.7% (3.4%)	0.7% (0.7%)
Japan mid 89	72.4% (3.9%) n=134	14.9% (3.1%)	11.9% (2.8%)	0.7% (0.7%)
U. S. early 90	34.6% (4.1%) n=136	41.2% (4.2%)	23.5% (3.6%)	0.7% (0.7%)
U. S. mid 90	36.2% (4.0%) n=141	36.9% (4.1%)	24.1% (3.6%)	2.8% (1.4%)
Japan mid 90	31.6% (4.0%) n=136	38.2% (4.2%)	28.7% (3.9%)	1.5% (1.0%)
U. S. early 91	22.0% (3.5%) n=141	36.9% (4.1%)	34.8% (4.0%)	6.4% (2.1%)
Japan early 91	50.4% (4.5%) n=125	26.4% (3.9%)	23.2% (3.8%)	0.0%
U. S. mid 91	34.2% (3.7%) n=161	21.1% (3.2%)	42.2% (3.9%)	2.5% (1.2%)

Japan	mid 91	45.9% (4.5%) n=122	25.4% (3.9%)	27.9% (4.1%)	0.8% (0.8%)

Question I-7

If the [Dow, Nikkei] dropped 3% tomorrow, I would guess that the day after tomorrow the [Dow, Nikkei] would:

	"1. Increase	2. Decrease	3. Stay the Same	4. No Opinion
U. S. mid 89	33.3% (3.8%) n=150	26.0% (3.6%0	13.3% (2.8%)	27.3% (3.6%)
Japan mid 89	42.8% (4.2%) n=138	19.6% (3.4%)	8.0% (2.3%)	29.7% (3.9%)
U. S. early 90	34.8% (4.1%) n=138	23.2% (3.6%)	7.3% (2.2%)	37.8% (4.1%)
U. S. mid 90	18.6% (3.3%) n=140	27.9% (3.8%)	12.1% (2.8%)	41.4% (4.5%)
Japan mid 90	29.1% (3.9%) n=134	21.6% (3.6%)	3.7% (1.6%)	45.5% (4.3%)
U. S. Early 91	22.9% (3.7%) n=131	29.8% (4.0%)	8.4% (2.4%)	38.9% (4.3%)
Japan Early 91	28.1% (4.1%) n=121	16.6% (3.4%)	12.4% (3.0%)	43.0% (2.2%)
U. S. mid 91	36.2% (3.9%) n=152	16.4% (3.0%)	7.9% (2.2%)	39.5% (4.0%)
Japan mid 91	39.7% (4.5%) n=121	10.7% (2.8%)	9.9% (2.7%)	39.7% (4.5%)

Question I-8

What do you think is the probability of a stock market crash, like that of October 29, 1929 or October 19, 1987, in the next six months? (An answer of 0% means that it cannot happen, an answer of 100% means that it is sure to happen.)

		"Percent:"
U. S.	mid 89	14.91% (1.17%) n=153
Japan	mid 89	14.61% (1.85%) n=138
Japan	late 89	13.70% (2.74%) n=158
U. S.	early 90	22.01% (1.85%) n=137
U. S.	mid 90	23.67% (1.91%) n=139
Japan	mid 90	31.71% (2.28%) n = 134
U. S.	Early 91	17.32% (1.55%) n=134
Japan	Early 91	18.61% (2.11%) n=122
U. S.	mid 91	14.40% (1.13%) n=156
Japan	mid 91	19.73% (2.28%) n=118

Questions II-1 and II-2

Expected Future Price Changes

II. "How much of a change in percentage terms do you expect in the following (use + before your number to indicate an expected increase, a - to indicate an expected decrease, leave blanks where you do not know):"

"[FILL IN ONE NUMBER FOR EACH]"

"1 Dow Jones Industrial Average "		"In 3 months	In 6 months	In 1 year	In 10 years"
U. S. mid 89		1.24% (0.48%) n=152	1.93% (0.69%) n=121	3.49% (1.11%) n=121	---
Japan mid 89		3.26% (0.34%) n=111	5.37% (0.52%) n=111	8.48% (0.80%) n=107	83.57% (7.75%) n=94
Japan late 89		2.30% (0.26%) n=110	4.98% (0.49%) n=104	10.46% (0.87%) n=102	108.57% (9.56%) n=84
U. S. early 90		-4.40% (0.65%) n=106	-5.40% (0.92%) n=104	-0.26% (1.19%) n=110	129.02% (8.76%) n=103
Japan early 90		4.58% (0.76%) n=84	7.49% (1.06%) n=82	12.57% (1.25%) n=79	99.91% (10.09%) n=67
U. S. mid 90		-4.31% (2.10%) n=99	-2.10% (1.30%) n=102	1.65% (1.39%) n=113	95.85% (13.43%) n=105
Japan mid 90	B	-0.40% (0.80%) n=98	1.48% (1.03%) n=96	7.29% (1.28%) n=95	88.60% (9.25%) n=90
	A	-2.12% (1.05%) n=64	0.60% (1.29%) n=62	4.28% (1.80%) n=59	93.41% (12.27%) n=59

U. S. early 91	1.04% (0.83%) n=92	0.34% (1.06%) n=95	6.17% (1.10%) n=106	124.49% (17.76%) n=97
Japan early 91	4.08% (1.54%) n=87	6.34% (1.61%) n=83	11.26% (1.58%) n=90	141.91% (16.67%) n=76
U. S. mid 91	-1.31% (0.54%) n=116	1.73% (0.68%) n=118	7.82% (1.18%) n=129	104.15% (7.51%) n=120
Japan mid 91	3.48% (0.61%) n=93	5.81% (0.92%) n=95	8.55% (1.21%) n=94	112.73% (15.64%) n=81

"2. Nikkei Dow (Japan)"

		"In 3 months	In 6 months	In 1 year	In 10 years"
U. S. mid 89		0.04% (0.70%) n=65	-1.52% (1.25%) n=61	-7.67% (1.84%) n=67	---
Japan mid 89		3.18% (0.44%) n=127	6.51% (0.57%) n=127	9.49% (0.89%) n=124	129.06% (10.12%) n=107
Japan late 89		3.42 (0.34%) n=128	5.67% (0.41%) n=124	13.02% (2.11%) n=120	176.25% (14.13%) n=91
U. S. early 90		-5.28% (1.03%) n=65	-8.76% (1.52%) n=62	-9.14% (2.03%) n=70	110.21% (14.46%) n=63
Japan early 90		2.13% (1.11%) n=102	4.15% (1.11%) n=98	10.84% (1.21%) n=100	146.88% (15.25%) n=78
U. S. mid 90		-6.34 (1.00) n=62	-6.25 (1.52) n=63	-8.76 (1.85) n=69	67.08 (12.65) n=64
Japan mid 90	B	1.53 (0.92%) n=114	4.51 (1.16%) n=113	12.07 (1.61%) n=111	138.36 (12.41%) n=104
	A	-0.18 (1.45%) n=77	1.95 (1.70) n=76	8.22 (2.18%) n=73	152.22 (17.45%) n=69
U. S. early 91		1.50% (1.05%) n=45	-0.40% (1.61%) n=47	0.94% (2.09%) n=53	96.98% (12.61%) n=50

Japan	early 91	7.49 (0.92%) n=106	11.91 (1.16%) n=102	19.33 (1.61%) n=104	187.70 (12.41%) n=83
U. S.	mid 91	-3.98% (0.99%) n=57	-5.49% (1.56%) n=58	-2.52% (1.85%) n=63	81.04% (9.63%) n=62
Japan	mid 91	8.64% (0.68%) n=105	9.54% (0.96%) n=108	18.36% (1.77%) n=110	161.53% (12.66%) n=93

Numbers in parentheses are standard errors. See also Notes to Tables below.

Notes to Tables

B and A in the mid-1990 answers indicate the questions were made under the following specifications respectively:

> B "Please try to remember your thought at the end of July before the Iraq shock."
>
> A "Please answer from your thought and investment behavior immediately after the Iraq shock."

The U. S. questionnaires, printed just days before the beginnings of the Iraqi oil crisis, did not make such specifications. The main events in the Iraqi oil crisis were the July 24 Iraqi demand for a $7.00 per barrel increase in the price of oil with threats of war against Kuwait and Saudi Arabia, and the August 2, 1990 invasion of Kuwait by Iraq. None of the 140 U. S. mid-1990 questionnaires was filled out before July 24, but 52 were filled out before August 2. The best comparison of the U. S. mid-1990 answers is probably with the Japanese "A" answers, that is used in figure.